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Boston Edison Company

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Via Hand Delivery

February 14, 2005

Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
One South Station, 2nd Floor
Boston, MA 02110

Re: D.T.E. 04-71, Boston Edison Company d/b/a NSTAR Electric, Responses to the
Department's First Set of Information Requests

Dear Secretary Cottrell:

Please find enclosed herewith the original and one copy of the responses of Boston Edison Company d/b/a NSTAR Electric to the Second Set of Information Requests of the Department of Telecommunications and Energy as set forth in the attached list.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in dark ink, appearing to read "Mary E. Grover", written in a cursive style.

Mary E. Grover
Assistant General Counsel

Enclosures

cc: Denise L. Desautels, Hearing Officer (4 copies)
Service List



D.T.E. 04-71
Information Responses

DTE-C-12
DTE-E-24
DTE-E-25
DTE-E-26
DTE-N-13
DTE-N-14
DTE-N-15
DTE-N-16

February 14, 2005

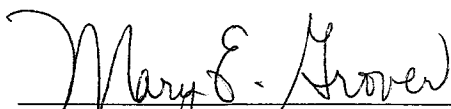
**COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY**

Boston Edison Company d/b/a
NSTAR Electric

D.T.E. 04-71

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing in accordance with the Department rules.



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DATED: February 14, 2005

Information Request DTE-C-12

Please refer to DTE-C-6 and DTE-E-15. NSTAR indicates it will limit work to daylight hours. For those seasons when daylight extends into the evening, i.e., significantly past 6:00 p.m., please discuss: (a) whether work hours typically conform to a “standard day” which does not routinely extend into the evening, and (b) whether work during evening hours would be an occasional rather than a regular occurrence. Please discuss measures the Company expects would be taken to ensure that any disturbance from work during evening hours is minimal.

Response

The Company is planning to require the project construction contractor to work the maximum amount of daylight hours as required to complete the project prior to the summer of 2005. The Company will request normal hours that typically conform to a “standard day,” but will allow the contractor to proceed as required to maintain the project schedule and make up for any lost time that may occur.

The Company does realize that various combinations of construction activities, populated areas and evening work should be kept to minimum and will, thus, work with the construction contractor and the affected abutters to minimize the impact. Construction management measures utilized on a case-by-case occurrence could be to reschedule the work, or add staffing and machines to finish the task or a certain part of the task prior to the off-schedule time.

Information Request DTE-E-24

Please refer to DTE-E-12. Please provide an update on NSTAR's request for information regarding the locations of private wells in Sherborn.

Response

NSTAR Electric has received information from the Sherborn Board of Health regarding which properties in the immediate proximity of the proposed relocation project have private wells, to the extent that the Board of Health has such information. A table listing those properties is provided below. NSTAR Electric will review the plans on file with the Board of Health for those properties impacted by the relocation project and will consult with the underlying property owners to ensure that no adverse impacts to private wells will occur from construction.

Lots crossed or immediately proximate to project location in Sherborn:

Lot	House	Street Address	Well Info. Ava.
1	Y	36 Kendall Ave.	N
1A	N	36 Kendall Ave.	N
3	N	131 Kendall Ave.	N
4A	N – cell tower	Kendall Ave.	No address, no info.
5	Y	19 Kendall Ave.	Y, Plans Ava.
7	Y	9 Kendall Ave.	N
74A	Y	100 Prospect St.	Y, Plans Ava.

Does not include MDC aqueduct or Conrail properties

Information Request DTE-E-25

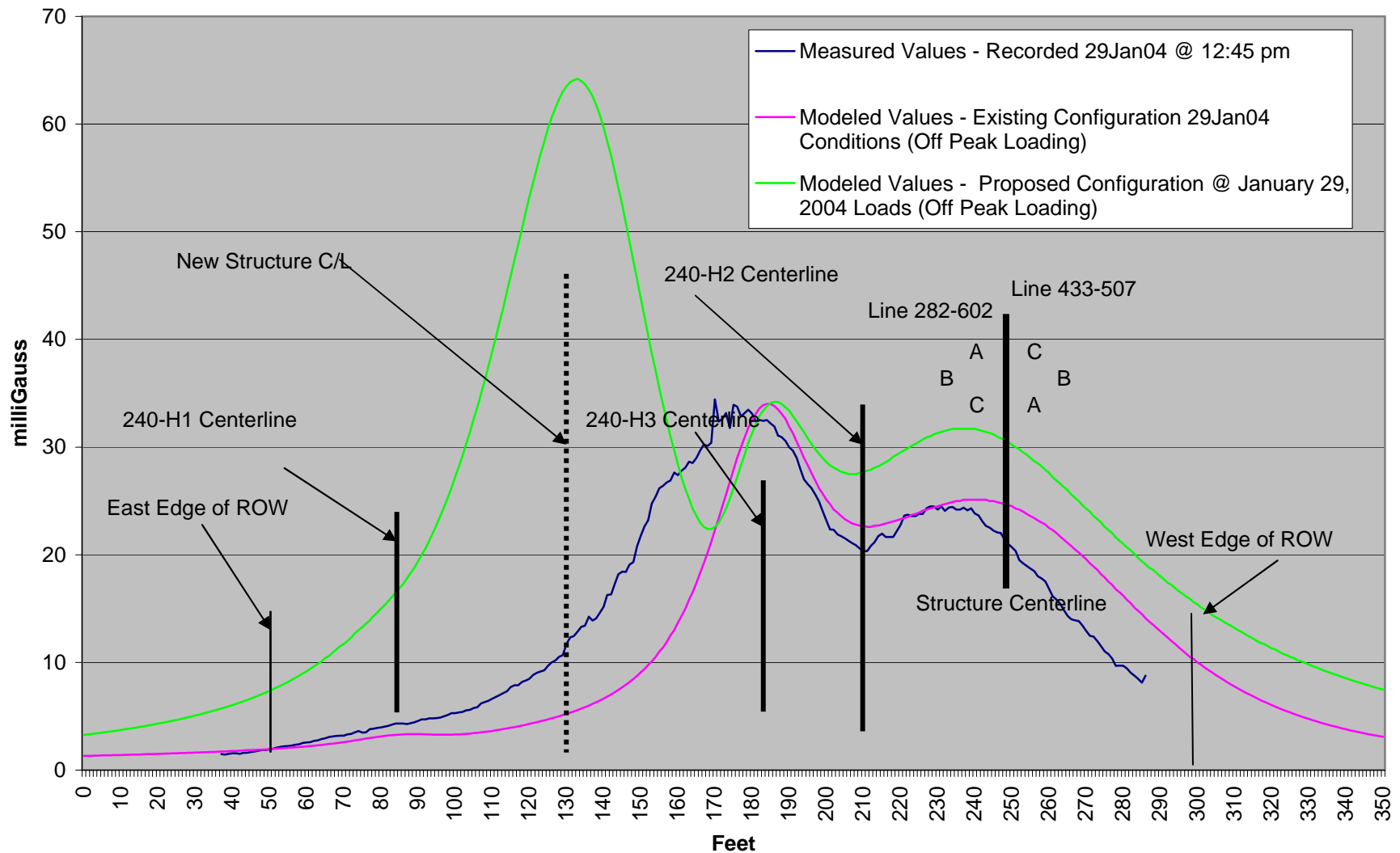
Please provide cross-sectional graphs of the information provided in the response to DTE-E-22, parts a and b, presented so that current and future configurations can be directly compared, specifically by providing: (1) one graph showing (a) measured values, (b) modeled values for off-peak loading under the existing configuration, and (c) modeled values for off-peak loading under the proposed configuration; and (2) a second graph showing (a) modeled values for peak loading under the existing configuration, and (b) modeled values for peak loading under the proposed configuration.

Response

Please refer to the cross-sectional graphs provided in Attachments DTE-E-25a and DTE-E-25b.

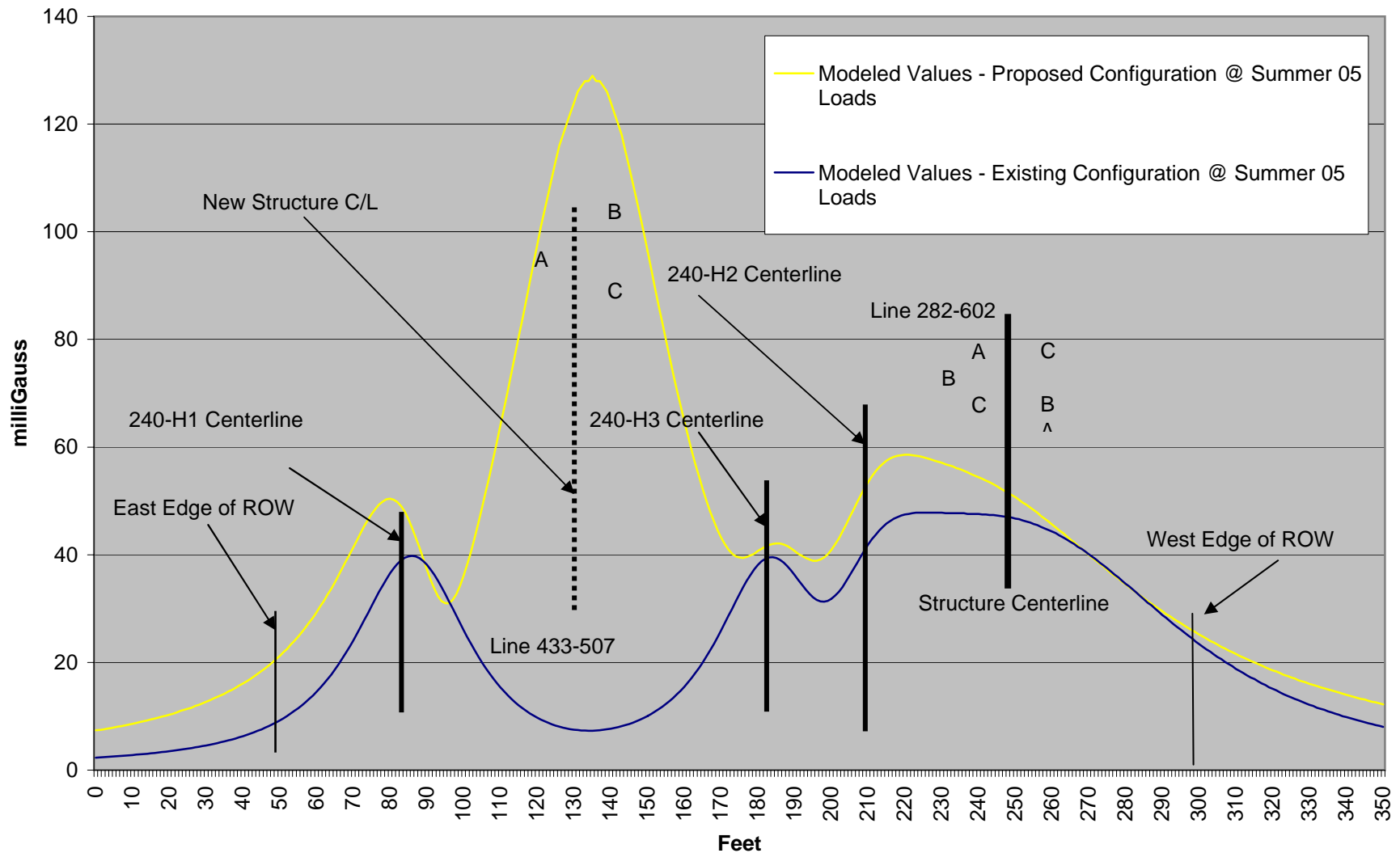
Nstar Transmission Lines 433-507 and 282-602

D.T.E. 04-71; Attachment DTE-E-25a Magnetic Flux Density (mG) - Off Peak Loading (Existing & Proposed Configuration)



Nstar Transmission Lines 433-507 and 282-602

D.T.E. 04-71; Attachment DTE-E-25b Magnetic Flux Density (mG) - Peak Loading (Existing & Proposed Configurations)



Information Request DTE-E-26

Please refer to DTE-E-23. Please identify the two locations at which angle structures would cause interference if the proposed alignment were moved closer to the center of the right of way. Please explain whether “modification of the structures” would involve proposed or existing structures, and how it would result in higher costs and circuit outages.

Response

The two locations are at structure 8, approximately 1,500’ north of Kendall Avenue, and structure 21, adjacent to Melody Way. Both of the proposed structures have guy wires, and moving them closer to the existing distribution lines could result in an interference issue. Possible solutions would be to redesign the proposed structures so that they were installed on foundations, and guy wires were not required, or to move or modify the distribution structures so that the interference was eliminated. Because of the high cost of foundations, the more cost-efficient solution would be to change the distribution structures. This would most likely be done by installing taller poles. This work would increase the cost of the project, and lines would need to be taken out of service to complete the work.

Information Request DTE-N-13

Please refer to DTE-N-3 and DTE-N-4. NSTAR's Transmission Planning Criteria reference the "NEPOOL and NPCC criteria specified in the NEPOOL Form No. FERC 715 filing." Do the referenced criteria encompass all the criteria cited in the response to DTE-N-3? Besides the reference to the NEPOOL and NPCC criteria, are there any other provisions of NSTAR's Transmission Planning Criteria that are relevant to the need for the proposed project? If so, please identify and explain the provisions.

Response

The criteria mentioned in NSTAR Electric's Planning Criteria that references the NEPOOL FERC Form No. 715 filing also includes North American Electric Reliability Council (NERC) Planning Standards in addition to the criteria stated in response to DTE-N-3 and DTE-N-4. As they relate to this project, NPCC, NEPOOL and NSTAR Electric planning standards comply with the industry-wide NERC planning standards. There are no other provisions of the Company's Transmission Planning Criteria that are relevant to the need for the proposed project in addition to those already mentioned.

Information Request DTE-N-14

Please refer to DTE-N-6, parts b and c. Please provide the Department with some information to give an indication of the incidence of simultaneous failure of double-circuit transmission lines, in the NSTAR system or more generally in the industry. Over the last ten years or more, what is the past incidence in the NSTAR system of failures due to the mechanisms cited in DTE-N-6, part c? How many miles of double-circuit transmission line were in operation in the NSTAR system over this period? Based on NSTAR's knowledge of experience representing wider industry area, is the overall long term risk of simultaneous failure of double-circuit lines by all mechanisms likely similar to, or likely larger or smaller than, the actual past experience in NSTAR's system?

Response

Over the last seven years there have been at least three incidences of the simultaneous loss of both circuits on a double-circuit transmission line on the NSTAR Electric system.

There are approximately 75 miles of double-circuit transmission lines on the NSTAR Electric system. The potential failure mechanisms cited in response to Information Request DTE-N-6(c) include: lightning/severe storms, failure of a static wire, conductor failure and mechanical failure of structural or insulating elements. These are among the principal line-related failure mechanisms. For the NSTAR Electric system over the last several years, lightning has been the leading cause of individual circuit failures, causing an average of 3 failures per year. Storm-related static wire failures have averaged 2 incidents per year. Mechanical failures of insulators, cross-arms and poles combined have produced an average of one event per year.

The loss of a double-circuit tower line is a single contingency under the criteria which have been established based upon lengthy industry experience. The NSTAR Electric experience represents a very small sample associated with those criteria. The Company is continuing its efforts to improve circuit condition and performance on all fronts through a comprehensive inspection and corrective maintenance program. It is our objective to reduce the rate of all transmission-line failure incidences. However, the criteria to which the system is designed require the Company to anticipate the next event and to continue to regard the loss of a double-circuit transmission line as a single contingency. This is essential to establishing the transmission infrastructure needed to reliably serve our customers for the future.

Information Request DTE-N-15

- a. Please describe the maximum extent of the “disconnection of service to some customer loads in the area” in the event of a simultaneous 433-507/ 282-602 fault. Indicate the approximate number of affected customers or amount of affected load, and the approximate duration of the service interruption. Assume that the operator-performed disconnection of customer load is “fast enough to prevent failure of the overloaded equipment.”
- b. Taken alone, do the consequences in part a, above, justify the proposed project, based on any applicable criteria (NSTAR, NEPOOL/ISO-NE, NPCC)? Or does the need for the proposed project, based on applicable criteria, depend on the possibility that there would be subsequent failure of other supply lines in the area, potentially occurring “in a cascading manner?”

Response

- a. The maximum extent of the “disconnection of service to some customer loads in the area” in the event of a simultaneous 433-507/ 282-602, assuming that the operator-performed disconnection of customer load is “fast enough to prevent failure of the overloaded equipment.” would be approximately 150 MVA. However, the overloads seen on these facilities for the projected load levels indicate that there is a high likelihood that there would not be enough time for operators to respond as the overloads exceed the 15-minute rating of critical system elements. The approximate duration of the service interruption would be variable depending on the nature of the event that causes the failure and the extent of the potential damage to the double circuit tower line. The shortest duration would likely be between 4 to 8 hours. A more significant level of damage could require anywhere from 1 day to a number of days depending on the severity of the damage.
- b. The consequences described in “part a” cannot be taken alone without consideration of the possibility of the subsequent failure of the other supply lines “in a cascading manner.” The magnitudes of the potential overloads resulting from the 433-507 / 282-602 DCT contingency are too high (by virtue of meeting or exceeding STE ratings) to safely rely on operator action. While the NPCC and NEPOOL criteria does permit the manual disconnection of customers loads in small areas in response to contingencies involving multiple elements, it is only allowed in a controlled manner, and only to the extent that overall system reliability is not jeopardized. This project is addressing the potential

Boston Edison Company d/b/a NSTAR Electric
Department of Telecommunications and Energy

D.T.E. 04-71

Information Request: **DTE-N-15**

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Person Responsible: Steven M. Masse

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uncontrolled disconnection of up to 650 MVA of customer load, as well as the potential failure of other supply lines, which is in violation of both NPCC and NEPOOL reliability criteria.

Information Request DTE-N-16

Please refer to DTE-N-2. Do the forecasted substation loads reflect a common rate of growth? Does the Company's forecast method reflect differences in load growth at the substation level, and if so how? If not, at what service area level does NSTAR's forecasting distinguish differences in subarea load growth?

Response

The forecasted substation loads do not represent a common rate of growth. As stated in section 2.4.1.3 of the Petition, the Company develops specific load forecasts for substations within the NSTAR Electric system. These specific load forecasts were developed by allocating peak load to the substations on the Company's system within the Greater Boston area, including the Project sub-area, over the planning horizon. The allocation factors were derived using ABB software that has the capability to develop individual substation load forecasts. The ABB software is helpful in developing individual substation load forecasts because it is designed to identify growth potential on an area-by-area basis. The ABB software identifies growth potential for each substation area based on historical load data, land-use data and a customer growth-potential assessment within each area, and applies a weather sensitivity calculation for each of the identified areas. Specifically, the Company provides ABB with historical peak load data (10 years) for its substations, as well as information regarding demographics in the substation areas, such as the number of residential, commercial and industrial customers and associated uses by city and town in those sectors. The ABB software takes as further inputs forecasted zoning information, land use information and infrastructure information and performs an econometric forecast using statistical techniques to project allocation factors to individual substations.